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ABSTRACT

This study investigated the effects of intraprogram synopses on children's comprehension of essential and peripheral content of an action-adventure television drama. The impact of these synopses on the comprehension of commercials also was investigated. A total of 30 second graders and 30 fifth graders participated. Synopses were presented to experimental subjects either before or after commercial breaks; no synopses were presented to control subjects. Immediately after viewing the program, all subjects were given a 44-item multiple-choice test assessing comprehension of the program and commercials. The second-grade boys in the post-commercial condition showed significantly greater comprehension of essential content than did second-grade boys or girls in the pre-commercial or control conditions. The comprehension level of the post-commercial second-grade boys was comparable to that of the fifth graders. There was no corresponding effect for second-grade girls in the post-commercial condition. Further, the synopses did not interfere with the comprehension of commercials for any group. Similarities and differences with past research are discussed. (Author/RH)

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The Effects of Intraprogram Synopses on Children's Comprehension of Television Programming and Commercials

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Running Head: TELEVISION

Abstract

This study investigated the effects of intraprogram synopses on children's comprehension of essential and peripheral content of an action-adventure television drama. The impact of these synopses on the comprehension of commercials was also investigated. Thirty second graders and 30 fifth graders participated. There were two experimental conditions (synopses presented either before or after the commercial breaks) and one control condition (no synopses). Immediately following the presentation of the program, all subjects were given a 44-item multiple-choice test to assess comprehension of the program and commercials. The second-grade boys in the post-commercial condition showed significantly greater comprehension of essential content than did second-grade boys or girls in the pre-commercial or control conditions. The comprehension level of the post-commercial second-grade boys was comparable to that of the fifth graders. There was no corresponding effect for second-grade girls in the post-commercial condition. Further, the synopses did not interfere with the comprehension of commercials for any group. Similarities and differences with past research are discussed.

The Effects of Intraprogram Synopses on Children's Comprehension of Televised Essential Content and Commercials

Concern over the possible negative effects of television viewing on children has generated a large body of research during the past 20 years. While research continues on the socializing effect of television, a newer focus is on factors related to comprehension of televised information (e.g., Collins, Wellman, Keniston, & Westby, 1978). Three types of content have been postulated as necessary to fully understand the plot of a television program. These are central, implicit, and peripheral content. Central content is key information necessary to understand the program, such as actions of main characters. Implicit content is information that is implied, such as motives of characters or the interrelationship between scenes. Peripheral content refers to non-essential information, such as clothing the characters wore during the program. There are substantial differences in ability to comprehend these three types of content between young children, older children, and adults (Collins, 1983).

Young children, especially those less than nine years of age, have many difficulties comprehending the content of television programs. Comprehension of central content is difficult for young children because they are not adept at identifying key content, separating key content from peripheral content (Collins, 1973; Collins, Wellman, Keniston, & Westby, 1978; Huston & Wright, 1983; Winick & Winick, 1979) and integrating events over time (Collins, 1983). Young children are also limited in their understanding of implicit content. This limitation directly affects their ability to perceive interrelationships between scenes or

motivations of characters. Difficulties for young children in comprehension of peripheral content are manifested by poor recall of televised peripheral information (Collins, 1970; Hawkins, 1973). As children mature, they gradually improve in their comprehension of all three types of content.

Young children's limitations in understanding of central and implicit content directly influence their perception of television violence. Violent action scenes are perceived as unrelated to consequences because of young children's difficulties in integrating events over time or perceiving the interrelationship between scenes (Collins, 1973; Collins, Berndt, & Hess, 1974). Recognizing this and other potential problems related to children's noncomprehension of a television plot, many researchers have designed methods to increase comprehension.

In one method, children watch television with adult coviewers who point out or comment on content necessary to understand the program as it occurs. This technique has increased young children's comprehension of central and implicit content (Collins, Sobol,& Westby, 1981; Friedrich & Stein, 1975; Rule, Nesdale, & McAra, 1974; Watkins, Calvert, Huston-Stein, & Wright, 1980; Wheeler & Dusek, 1973). However, this "verbal labeling" technique requires adult participation, which is not always available.

In a method that did not require the presence of an adult coviewer, key scenes were frozen for 30 sec while a voice-over provided a summary of the plot. Use of this technique resulted in little increase in comprehension of central, peripheral, or implicit content for young children (Watkins et al.,1980).

A more promising approach, which does not require adult participation, uses synopses of central content (Kelly, 1983). Unlike the Watkins et al. (1980) approach, the Kelly (1983) "intraprogram synopses" combined moving frames of centrally relevant scenes with a voice-over providing plot summarizations. The scenes were selected from the program. The voice-over highlighted central content through labeling while the placing together of key scenes facilitated assimilation of this information into memory. In Kelly's study, second graders who saw post-commercial synopses had significantly greater comprehension of central content than second graders who saw pre-commercial or no synopses. The post-commercial second graders had a central content comprehension level comparable to that of fifth graders. There was no significant impact of synopses on comprehension of peripheral or implicit content for any group.

Implicit and central content comprehension have traditionally been studied as qualitatively different types of understanding. In theory, the differences between the two types of content are easy to describe. In practice, distinguishing between these two types of content is difficult. Central and implicit content have many similarities, and it is quite common for the same story information to fall into both categories. For example, a typical scenario of an action-adventure drama is a perpetrator committing a crime in the beginning of the program and being shot by police at the end. Information about the shooting is implicit, in that it is a consequence of an action in a earlier scene. The shooting is also central plot information, in that a recounting of the central points of the story would be incomplete without this

information. Both central and implicit content comprehension have increased as a result of verbal labeling (Collins, Sobol, & Westby, 1981; Rule, Nesdale, & McAra, 1974). Because of these similarities, we combine central and implicit content to create a new category of plot information. We will call the combination of implicit and central content essential content.

Because of potential negative effects of noncomprehension of television programming (Collins, 1983), it would be desirable to incorporate into network programming a technique that increased young children's comprehension of the program. Kelly's study indicated that it is possible to increase young children's comprehension of a television program through the use of intraprogram synopses. However, the television industry depends on the sale of commercials for its livelihood. Before intraprogram synopses could be incorporated into network television programming, researchers must demonstrate that intraprogram synopses have no adverse affect on the comprehension of commercials.

This study expands upon the results of Kelly's study (1983) by evaluating the effects of synopses on the comprehension of essential content and commercials. The following hypotheses are examined:

1. Post-commercial synopses increase young children's (second graders) understanding of the essential content of the television program.
2. Pre-commercial synopses do not increase comprehension.
3. Children's understanding of commercials is not affected by the presence of synopses.
4. The older children (fifth graders) were included in this

study to serve as a standard of mature comprehension of the television plot. The comprehension of the fifth graders is not expected to be affected by the presence of synopses.

Method

Subjects

The subjects were 30 second graders (15 male and 15 female) and 30 fifth graders (15 male and 15 female) from a local elementary school in a rural university community in Northern California. The children were randomly assigned to the experimental conditions with an equal number of boys and girls in each grade/condition subgroup.

The children were tested in groups of five and the test groups were crossed for sex, with one test group of three boys and two girls and one of two boys and three girls within each treatment/grade condition.

Experimenters

The experimenter was a white female graduate student in developmental psychology. There were fifteen assistants; 10 female, 5 male. Assistants were used in groups of five for each of the twelve test sessions. All assistants were naive as to the purpose of the study.

Materials

The television program used for this study was identical to that used by Kelly (1983). The program is also identical to the Collins et al. (1978) "complex-ordered" version except for the insertion of two commercial breaks. It consists of a main plot and subplot from the original one-hour program. The program runs for a total of 25 min 35 sec.

Treatment Conditions

There were three treatment conditions: two experimental and one control. For all conditions, the first commercial break was inserted 7 min 5 sec into the program; the second was inserted 21 min 26 sec into the program.

The experimental conditions included all scenes and six of the original commercials (three at each commercial break). In addition, two synopses of the plot were added, either before each commercial break (pre-commercial condition) or after each commercial break (post-commercial condition). The number of commercials for the experimental conditions was reduced to three per break in order to match the length of the break for the experimental and control conditions. In both experimental conditions, the first synopsis was 26 sec in length and the total length of the first commercial break was 1 min 59 sec. The synopsis during the second commercial break was 1 min and the total length of time for the second break was 2 min 37 sec. Viewing time for the experimental versions was 30 min 11 sec.

In the control condition, there were a total of nine commercials, four at the first break and five during the second break. The first commercial break was 1 min 58 sec in length; the second was 2 min 35 sec. Total viewing time for the control version was 30 min 8 sec.

Synopses

Synopses of the central plot were inserted before or after each commercial break for the experimental conditions. The following is an excerpt from the first synopsis:

(The scene showing the forger stealing the check protector

from the warehouse.) Voice-over: "Children, remember when the man stole the check protector?"

(The term "check protector" was used in the synopses because the machine that the man stole was labeled this way in the program. Other scenes in the synopses specifically show the forger using the check protector and ask the children to "remember how he made bad checks with the check protector?" While it is doubtful that the children, or for that matter most adults, know the precise purpose of a check protector, the concept of a check protector as something necessary to produce "bad checks" is simpler to understand.)

Test

To assess children's comprehension of the television program and the commercials, a test containing 44 multiple-choice items was used. As in past studies (Collins et al., 1978; Kelly, 1983), comprehension was measured by performance on the objective test. The first 29 items, from the test used by Collins, Wellman, Keniston, & Westby (1978) and Kelly (1983), measured comprehension of the central content (7 items), peripheral content (13 items), and implicit content (9 items). The central and implicit content items were combined in the analysis to measure comprehension of essential content. An additional 15 items were designed for this study to measure comprehension of commercials.

Procedure

The experimenter met a group of five children in their classroom and accompanied them to the treatment room. When in the room, the experimenter identified herself and told the children that they were going to view a short television program and that they would be asked to

answer some questions about it. The children were shown a videotape of the program appropriate to their group (either pre- or post-commercial or control groups). The experimenter remained in the room and verbally discouraged group discussion during the course of the program. The assistants administered the test immediately after the program ended. Each assistant administered the test to one child. Second graders had the test individually read to them; fifth graders read it themselves. The assistants helped the children understand difficult words in the items and assisted them in marking their answers on the multiple-choice test. When the children were finished with the test, they were thanked for their cooperation and returned to their classrooms.

Results

A 3 (Condition) X 2 (Grade) X 2 (Sex) analysis of variance was computed for each of the following dependent variables: a) number correct on essential content items; b) number correct on peripheral content items; and c) number correct on commercial content items. Post-hoc analyses of mean differences and significant interactions were performed using Tukey's test.

Essential Content Comprehension

Central and implicit content scores were combined to calculate essential content scores. An analysis of essential content scores indicated a significant main effect for grade, $F(1,48) = 13.47$, $p < .001$. The fifth graders' scores ($M = 12.57$) were significantly higher than the second graders' scores ($M = 10.43$). There no other significant main effects.

A significant three-way interaction for Condition X Grade X Sex also appeared, $F(2,48) = 3.38$, $p < .05$. Figure 1 shows the differential effect of condition for sex and grade.

Insert Figure 1 about here

Peripheral Content Comprehension

The analysis of peripheral content indicated a main effect for grade, $F(1,48) = 22.33$, $p < .001$. Fifth graders ($M = 8.93$) scored higher than second graders ($M = 7.17$).

There was also a significant Condition X Sex interaction, $F(2,48) = 3.608$, $p < .05$. Subsequent analysis indicated a sex difference only in the post-commercial condition, where the mean score for boys in the post-commercial condition ($M = 9.4$) was higher than the mean score for girls in the post-commercial condition ($M = 7.2$, Tukey, $p < .05$). There were no other significant main effects or interactions.

Commercial Content Comprehension

The analysis of commercial content indicated a main effect for grade, $F(1,48) = 18.77$, $p < .001$. The fifth graders' mean score ($M = 10.43$) was significantly higher than that of second graders ($M = 7.80$). A main effect for sex also appeared, $F(1,48) = 4.575$, $p < .025$, resulting from a higher comprehension score for boys ($M = 9.77$) than for girls ($M = 8.47$). There was no main effect for condition and no significant interactions.

Discussion

Second graders in the post-commercial condition performed better on the essential content comprehension measure than second graders in the pre-commercial or control conditions. The results deviated from the original hypothesis as only the second-grade boys in the post-commercial condition had high levels of comprehension of essential content. These results appeared in the significant three-way interaction for the essential content scores.

That essential content comprehension was greater for these boys can be explained by comparing the content of the synopses with the content of the items. One section of the synopses asks the children to recall that the thief "killed the old man who surprised him." One item asks "what the man did to an old man" (the correct answer being "killed him.") One item asks why the man "does something to an old man" (the correct answer being "the old man surprised him.") Other items ask about what the "man does with what he stole" (he makes fake checks) and what he buys with the fake checks. The synopses specifically labeled this content. Such labeling could account for the greater levels of comprehension for the post-commercial second grade boys, but does not account for the sex difference.

A likely explanation for sex differences in essential content comprehension is the well-established effect of sex of the experimenter (Stevenson, 1965), i.e., children perform an experimental task better in the presence of an opposite-sex experimenter. Any advantage that the boys may have had, because of interest in the story and the action-adventure format, was further accentuated by the presence of a female

experimenter. The presence of a male experimenter in Kelly's study (1983) may have caused the girls to perform better while having little effect on the boys. This could account for the lack of significant sex difference in Kelly's study.

An analysis of peripheral content comprehension revealed a sex difference as well. There was a significant Condition X Sex interaction, where boys in the post-commercial condition had significantly greater comprehension than girls in the post-commercial condition. High levels of peripheral content comprehension seem to be related to high levels of comprehension of essential content. This relationship is consistent with the increase in peripheral content comprehension as a function of cognitive development (Collins, 1970; Hawkins, 1973).

There was no significant impact of condition on the comprehension of commercials. Comprehension improved as a function of grade, with fifth graders comprehending more commercial content than second graders. The effect of cognitive maturity on comprehension of commercials has been a consistent finding in the past (e.g., Wartella, 1980). One finding not appearing in previous research results is the significant effect of sex on commercial content comprehension. Boys performed better on the commercial content measure than did girls. In past findings, when sex differences did exist, girls have outperformed the boys.

In addition to sex-of-the-experimenter effects, another plausible explanation for the sex differences in commercial comprehension could be a higher level of interest in the commercials for the boys. A review of the commercials indicated that they were primarily male-oriented. An example of the boys' interest level was demonstrated during the

commercial promoting a powdered fish bait. While watching this commercial, many of the boys expressed interest in the product and talked among themselves about where they could buy it. The boys were still paying close attention to the television when the next commercial in the series was presented. This continuing attention could be explained by the effects of attentional inertia (Anderson & Lorch, 1983). Many of the girls indicated to the experimenter and each other that they thought the fish bait commercial was distasteful ("gross"), resulting in low levels of attention for that commercial. Since the girls had not paid as close attention to the commercial as had the boys, they were not as influenced by attentional inertia and their level of attention for the next commercial in the series also would be lower than the boys' level.

Fifth graders were not affected by the presence of synopses. This finding supports the hypotheses that comprehension for fifth graders would be unaffected by treatment condition because they were already adept at processing and encoding televised information into memory.

One implication of the results of this and Kelly's (1983) study is that intraprogram synopses could help mediate the effects of televised violence on children. Past research has demonstrated that if a child does not connect an aggressive action with its negative consequence, the mediating effect of the negative consequence is lost (Collins, 1975). A young child often perceives an act and its consequence as unconnected violent episodes because of cognitive limitations. Incorporation of intraprogram synopses into television programs could provide young children with the necessary cognitive connection between actions and consequences, and help to lessen the impact of televised violence on them.

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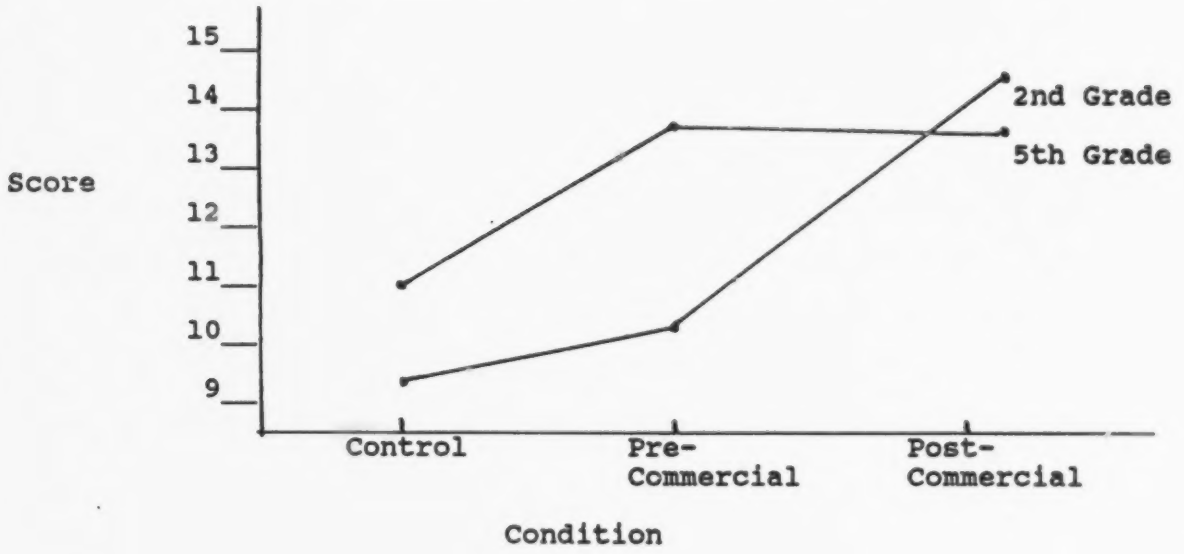
Figure 1 Condition X Grade Interaction for Boys and Girls for Comprehension of Central and Implicit Content.

Score X Condition X Grade for Boys



Score X Condition X Grade for Girls